New Patent claims

1. A filling device for capsules, in particular medicament capsules, containing
a first conveying device (1), which feeds a first liquid medium (2) containing the capsules (3) with a defined volume flow to a collecting vessel (17) via a first feed line (5, 6),
a detector device (12), which detects and counts the capsules (3) passing a measuring point (14) in the first feed line (5, 6),
a control device, which stops the first conveying device (1) when a predetermined number of capsules (3) is reached and compares the actual volume fed to the collecting vessel (17) with a desired volume to be put in and forms a volume difference value, and
a second conveying device (1'), which feeds second liquid medium (2') to the collecting vessel (17) via a second feed line (5', 6') as a function of the determined volume difference value until the desired volume is reached.

2. The filling device as claimed in claim 1, characterized in that the second conveying device (1') feeds second liquid medium (2') to the collecting vessel (17) in a volume corresponding to the volume difference value if the volume difference value exceeds a specific value.

3. The filling device as claimed in claim 1 or 2, characterized in that the first feed line has a

transparent capillary (6) at the outlet to the collecting vessel (17), and in that the detector device (12) transmits a light measuring beam for detecting the capsules (3) through the capillary (6).

4. The filling device as claimed in one of claims 1 to 3, characterized in that the second conveying device (1') has a capillary (6').

5. The filling device as claimed in either of claims 3 and 4, characterized in that the two capillaries (6, 6') are held by means of a common holder (10).

6. The filling device as claimed in one of claims 1 to 5, characterized in that the first conveying device (1) and the second conveying device (1') each have a hose or peristaltic pump (7 and 7', respectively).

7. The filling device as claimed in claim 5 or 6, characterized in that the two capillaries (6, 6') are connected by means of flexible hoses (5 or 5') to the respective hose or peristaltic pump (7 or 7') and, together with the holder (10) detachably fixed to the filling device and the hoses (5, 5'), can be removed from the filling device.

8. The filling device as claimed in claim 7, characterized in that the holder (10) is mounted on a pivot axis (27) and can be fixed in a latching position by means of a locking device (24, 29) and, by being pivoted about the pivot axis (27), can be released from the latching position and removed from the pivot axis (27).

9. The filling device as claimed in one of claims 1 to 8, characterized in that the control device controls a transport device (16) for collecting vessels (17) in such a way that the collecting vessels (17) are respectively moved into a filling position under the feed lines or the capillaries (6, 6') and, after being filled, are removed from the filling position.

10. The filling device as claimed in one of claims 1 to 9, characterized in that it has a first storage container (4) or a first connection (8) for a first storage container (4) for the first liquid medium (2) containing the capsules (3), and in that it has a second storage container (4') or a second connection (8') for a second storage container (4') for the second liquid medium (2').

11. The filling device as claimed in one of claims 3 to 10, characterized in that the transparent capillary (6) of the first conveying device (1) has a minimum diameter at the measuring point (14) in the range from about 1.0 to 1.6 mm.

12. A method for filling capsules, in particular medicament capsules, into a collecting vessel,
a first liquid medium (2) containing the capsules (3) being fed with a defined volume flow to a collecting vessel (17) via a first feed line (5,6) by means of a first conveying device (1),
the capsules (3) passing a measuring point (14) in the first feed line (5) being detected and counted,
the feed of the first liquid medium (2) containing the capsules (3) being stopped when a predetermined number

of capsules (3) is reached, the actual volume fed to the collecting vessel (17) being compared with a desired volume to be put in and a volume difference value being formed and,

if required, second liquid medium (2') being fed to the collecting vessel (17) via a second feed line (5', 6') by means of a second conveying device (1') as a function of this volume difference value until the desired volume is reached.

13. The method as claimed in claim 12, characterized in that, if the desired volume is reached during the feed of the first liquid medium containing the capsules before the predetermined number of capsules has been counted, a signal is generated.

14. The method as claimed in claim 12 or 13, characterized in that the size of the capsules passing the measuring point is determined.